Chapter 7 Summary and Next Steps

This section provides a brief summary and provides the next steps for the CALFED Bay-Delta Program (CALFED) (See Box 7-1 for a list of acronyms and abbreviations used in this section) surface storage investigations related to the feasibility studies, National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) environmental documentation, and 2009 Comprehensive Water Package.

Summary

California's water resources future has become increasingly uncertain and water management challenges are great. California is faced with:

- Declining ecosystems within the Sacramento-San Joaquin Delta (Delta) and Sacramento and San Joaquin river basins
- Greater impacts of droughts and decreased water supply reliability
- Impaired water bodies due to poor water quality
- Climate change
- Increasing flood risk
- Uncertainties of future Delta water management

Consequently, potential new surface storage projects will need to perform well under a number of potential future conditions, including potential new Delta conveyance. Surface storage must also support restoration actions with adaptive management. It must also provide flexibility to statewide and regional water management systems under various future scenarios to help ensure that the projects remain good investments. For example, Chapter 2 discussed how climate change introduces further uncertainty and risk in the availability of water supplies for California. This creates a significant challenge for hydrologic modelers to predict water supply availability into the future. Various climate change scenarios will be reviewed and considered for analyzing project performance for each of the surface storage investigations for the draft Feasibility Reports and Environmental Impact Statements/Environmental Impact Reports (EIS/EIR). Additionally, each investigation will consider the impacts of various future projects and programs, such as modified or new conveyance in the Delta, on potential surface storage project performance in the draft Feasibility Reports and EIS/EIRs.

Each project section discussed preliminary modeling conducted for this Progress Report on how example surface storage project formulations could be coordinated with potential new Delta conveyance. With new Delta conveyance, project objectives and operations of the potential surface storage projects would be adjusted. For example, potential surface storage projects may not be operated to improve Delta water quality for exported water because it is assumed that new Delta conveyance operations would provide substantial water quality benefits. For the most part, the surface storage projects could provide the same types of benefits described in the previous sections, but to varying degrees with or without new Delta conveyance. Typically, new Delta conveyance enhances project water supply benefits due to the increased ability to move water supply through the Delta, resulting in improved flexibility for exchange operations with the CVP and SWP systems. Figure 7-1 illustrates the potential combined water supply yield from all four CALFED surface storage projects operated with and without an assumed new Delta conveyance.

Box 7-1. Chapter 7 Acronym and Abbreviation List

BDCP	Bay-Delta Conservation Plan
CALFED	CALFED Bay-Delta Program
CEQA	California Environmental Quality Act
Delta	Sacramento-San Joaquin Delta
DHCCP	Delta Habitat Conservation and Conveyance Program
DWR	Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
NEPA	National Environmental Policy Act
Reclamation	United States Bureau of Reclamation

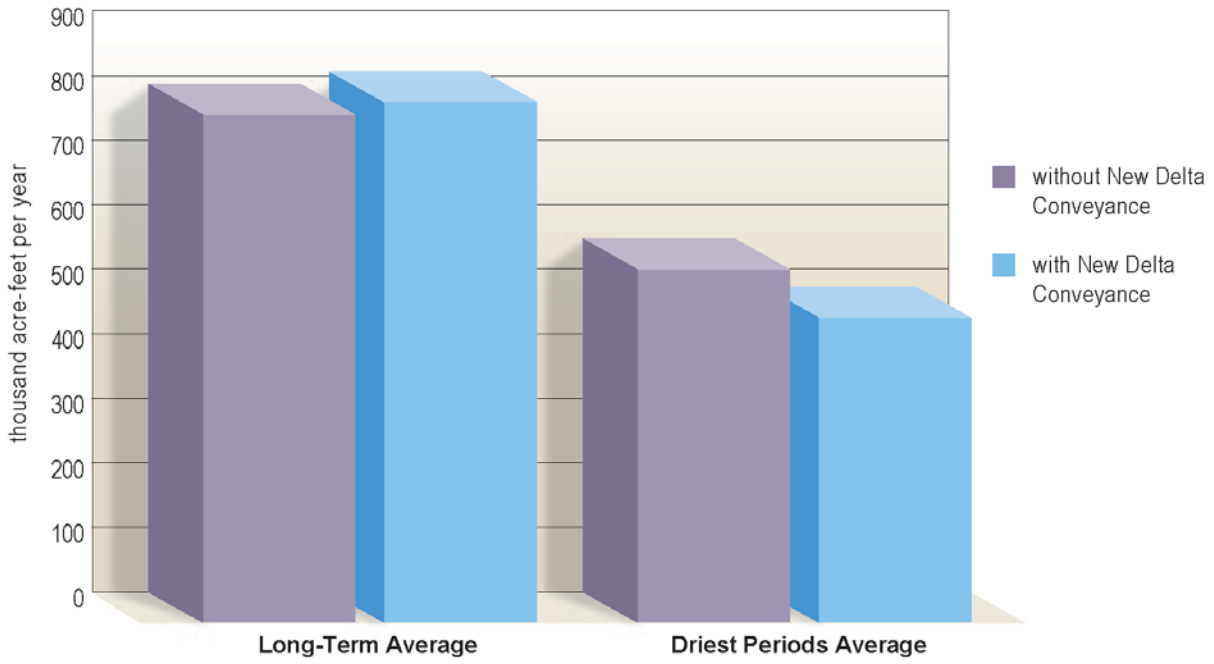

Figure 7-1. Potential Long-Term Average and Driest Periods Average Water Supply Yield from the CALFED Surface Storage Projects when Operated with and without Assumed New Delta Conveyance

As a result of water management challenges and uncertainties, water resources planning has changed significantly over the past several decades. New planning approaches to CALFED surface storage has resulted in a new era of project formulations. Project formulations have been explicitly conceived to support multiple CALFED program objectives such as water supply reliability, water quality, and ecosystem restoration. From the beginning of CALFED surface storage planning, it was acknowledged that the dam building model of the past would not be the primary solution for solving California's water challenges. Instead, project formulations would emphasize effective mitigation of potential impacts and improve environmental conditions. Project purposes emphasized storage that combined ecosystem restoration and water quality with more traditional purposes of water supply reliability, hydropower, and flood control. For example, these new projects would support aquatic and riparian ecosystem restoration focused on the Delta and its tributaries; improved drinking and habitat water quality; and water supply reliability improvements that ultimately support California's growing population and diverse economy (DWR, 2009a).

The CALFED surface storage project formulations have dedicated significant project resources (as primary and secondary objectives) to public benefits, including ecosystem restoration, water quality, flood control, emergency response, and recreation. Public benefits would be paid for by the state and/or federal governments. Potential projects also contribute to a reliable water supply for California. Urban and agricultural water supply reliability and drinking water quality are generally considered non-public benefits paid by water retailers and users.

The size and location of these surface storage projects facilitates the accomplishment of benefits in distinct ways:

1. Many benefits are achieved directly by releases from a new reservoir. For example, flows released from new storage facilities can provide targeted water to mimic the natural environment for ecosystem needs, help restore aquatic and riparian habitat, provide flushing flows for pollution from point and non-point sources, and provide better water quality.

2. Additional storage can provide significant system flexibility such that other facilities' operations can be modified (without reducing current benefits) to support additional benefits within the system. Additional water in storage can be used to either improve ecosystem functions and conditions for targeted species, or improve water quality or supply reliability for water users (DWR 2009a).

Implementation of new CALFED surface storage would potentially affect environmental and human conditions. There are some potential positive and negative effects. Regulatory and permitting requirements will require surface storage investigations to consider potential effects to stream flow regimes, water quality, stream geomorphology, fish and wildlife habitat, and risk of dam failure during seismic and operational events. In addition, agencies are developing analytical methodologies to determine greenhouse gas emissions associated with project construction and operations and their contribution to climate change. Mitigation of significant effects is required under state and federal environmental laws and is accomplished through implementation strategies that avoid, minimize, reduce over time, or mitigate for negative effects. Input from tribes, the public, and agencies has already been received by the Department of Water Resources (DWR) and the Bureau of Reclamation (Reclamation) on potential negative effects associated with project implementation. Additional input is anticipated as feasibility studies continue and NEPA/CEQA alternatives are developed and evaluated during the final phases of the investigations.

Next Steps

Since the release of many of the CALFED surface storage project documents (e.g., Initial Alternatives Information Reports and Plan Formulation Reports), the planning, biological, and regulatory environments have changed. These new conditions include Biological Opinions and reasonable and prudent alternatives for delta smelt and salmon, pumping constraints, the 2009 Comprehensive Water Package, Bay-Delta Conservation Plan (BDCP)/Delta Habitat Conservation and Conveyance Program (DHCCP) planning and decisions, climate change impacts and adaptation strategies, and rising sea levels. Solutions to Delta ecosystem restoration and improved water conveyance needs may result in changes to the pattern and timing of Delta water diversions, affecting water quality and hydrodynamic conditions in the Delta. These changes will help inform existing and future conditions for analysis in the feasibility reports and environmental documentation for the investigations. The draft Feasibility Reports and EIS/EIRs for the surface storage investigations are scheduled for release in 2011. Major future actions required to complete the investigations include:

- Evaluate project alternatives to reflect potential changes to existing and future conditions in the Sacramento and San Joaquin River Basins and the Delta, resulting from the ongoing operations reconsultation, BDCP/DHCCP efforts, and climate change
- Complete environmental studies, evaluations, and documentation to determine the type and extent of potential environmental impacts per NEPA and CEQA
- Identify potential effects (adverse and beneficial) and mitigation measures of the alternatives
- Develop detailed designs and cost estimates, potential benefits, cost allocation, and rationale for the selection of a Recommended Plan
- Conduct public outreach meetings and workshops with stakeholders, including federal and state agencies, tribes, and with Central Valley Project and State Water Project contractors
- Identify non-federal cost share partners
- Determine financial feasibility through ability-to-pay analyses of federal and non-federal project partners
- Prepare federal decision documents

An approximate schedule for the remaining feasibility studies is provided on Figure 7-2.

Senate Bill 2 and Funding to Develop Storage

If approved by California voters, Senate Bill 2 would authorize the issuance of an $11.14 billion bond to finance a safe drinking water and water supply reliability program (See Figure 7-3). Three billion dollars in funding would be made available for storage projects, and those projects approved for funding would be determined by the California Water Commission. Storage projects eligible for funding include the storage projects identified in the CALFED Record of Decision (CALFED, 2000b); groundwater storage and groundwater remediation projects that provide storage benefits; conjunctive use and reservoir reoperation projects; and local and regional storage projects that improve the operation of water systems and provide public benefits.

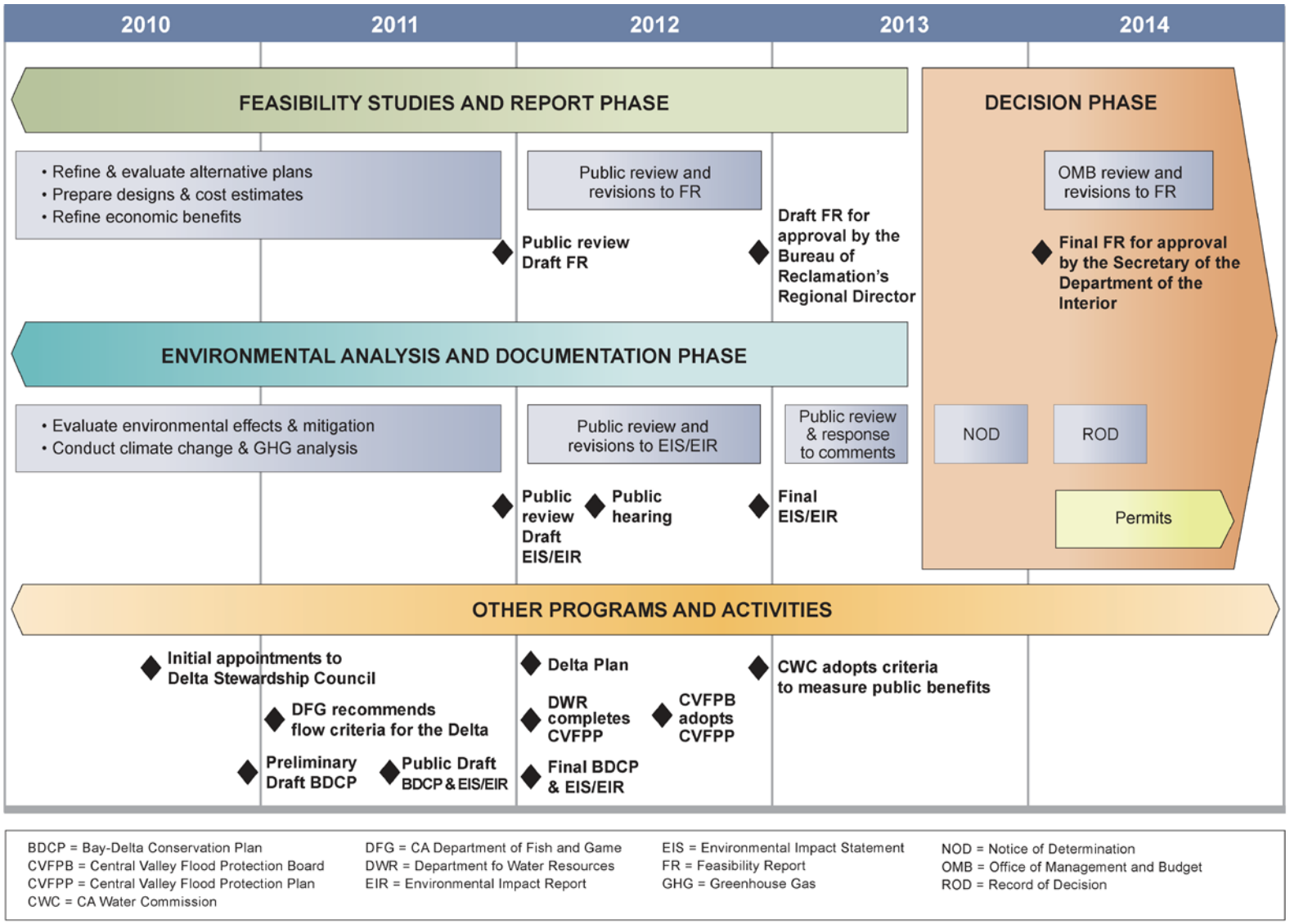

Figure 7-2. Approximate Schedule for the Surface Storage Feasibility Studies (Dates are estimated to adequately represent all of the studies)

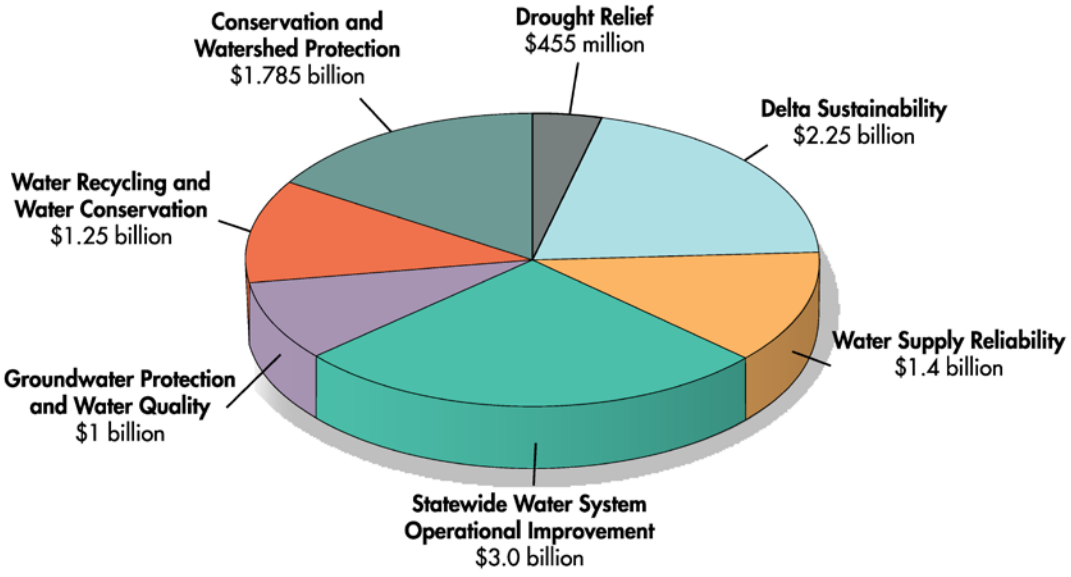

Figure 7-3. Bond Fund Breakdown

Money from the bond can only fund a maximum of 50% of the total project costs and can only be used to fund environmental enhancements or other public benefits, which are defined as:

- Ecosystem improvements, including changing the timing of water diversions, improvement in flow conditions, temperature, or other benefits that contribute to restoration of aquatic ecosystems for native fish and wildlife, including ecosystems and fish and wildlife in the Delta
- Water quality improvements in the Delta, or in other river systems, that provide significant public trust resources, or that clean up and restore groundwater resources
- Flood control benefits, including, but not limited to, increases in flood reservation space in existing reservoirs by exchange for existing or increased water storage capacity in response to the effects of changing hydrology and decreasing snow pack on California's water and flood management system
- Emergency response, including, but not limited to, securing emergency water supplies and flows for dilution and salinity repulsion following a natural disaster or act of terrorism
- Recreational purposes, including, but not limited to, those recreational pursuits generally associated with the outdoors

Funds cannot be expended to pay for costs associated with environmental mitigation measures or compliance obligations. Additionally, ecosystem improvements must account for 50% of the public benefits funded.

Projects will be selected by the California Water Commission through a competitive public process ranking the potential projects based on the expected return for public investment based on the amount of public benefits provided. For storage projects to be approved for funding, methods for reviewing projects need to be determined and a comprehensive review process needs to be completed, including:

1. California Water Commission must adopt methods for measuring environmental benefits (methods must be adopted by December 15, 2012)
    a. Using these methods, public benefits will be quantified for each eligible storage project
2. DWR must contract with each project beneficiary not receiving public benefits for its share of the project cost (DWR must receive commitments for 75% of the nonpublic benefit cost share of the project)
3. DWR must contract with the California Department of Fish and Game, State Water Resources Control Board, and other public agencies as necessary to ensure public benefits are administered and achieved
4. California Water Commission must conduct a public hearing process for public review and comment
5. Additional conditions that must be met:
    a. Project feasibility studies are complete
    b. California Water Commission determines that the project is feasible and will advance the long-term objectives of restoring ecological health and improving water management for beneficial uses of the Delta
    c. All project environmental documentation is complete and required federal, state, and local approvals have been obtained

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